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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project

Date

Author

TITLE

FOREST INSECT SURVEY
CLEARWATER NATIONAL FOREST
1940

by

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COMMENTS AND RECOMMENDATIONS

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December 6, 1940

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Forest insect surveys have been conducted on the Clearwater National Forest and on adjacent privately owned lands for the past several years for the purpose of determining the status of mountain pine beetle infestations in stands of white pine. While the survey of 1939 was in the nature of a check on the areas covered by 1939 spring control operations and a few other small areas, the 1940 survey though not made on the entire forest was conducted in all of the principal white pine stands.

The data obtained on the 1940 survey are summarized in the following table. A more thorough analysis is given with each of the units separately.

SUMMARY OF THE 1940 SURVEY DATA

Unit surveyed	Acres	Infested trees per acre 1939	Percent of stand killed 1940	Total infested trees 1940	Total
Sheep Mountain	2,880	.29	.23	.3	662
Dead Horse	1,600	No data	.0	.0	0
Tepee Creek	1,280	.19	.10	.15	128
Washington Creek	2,560	No data	.21	.4	538
Orogrande Creek	22,440	"	.07	.1	1,568
Musselshell	32,000	"	.06	.5	1,920
Totals	62,760		.077		4,816

Sheep Mountain Unit

Acres -- 2,880

Infested trees per acre	.23
Percent of stand killed	.3
Infested trees on unit	662

The mountain pine beetle infestation in the Sheep Mountain unit can be divided into two parts--one in the Dead Horse drainage and one in the Sheep Mountain drainage. Of these two areas the Sheep Mountain drainage is the more heavily infested, with an average of .36 infested trees per acre. Many of the infested trees are in groups of seven or more. In all probability the infestation will increase to some extent next year. There are about 1,600 acres in this drainage containing an estimated 600 infested trees.

On the eastern side of the dividing ridge and in the head branches of Dead Horse Creek the infestation averages but .15 infested trees per acre, which although abnormal is not an alarming condition.

Dead Horse Unit Acres -- 1,600

Infested trees per acre	None
Percent of stand killed	None
Infested trees on unit	None

Although no infested trees were recorded on approximately 33 acres of sample plots taken in the Dead Horse unit, a few scattered insect-killed trees were seen. However, the infestation is not considered at all serious.

Tepee Creek Unit Acres -- 1,280

Infested trees per acre	.1
Percent of stand killed	.15
Infested trees on unit	128

During the check survey of the Tepee Creek unit in 1939, reinfection of the white pine stands was found near the burned log decks, where control work had apparently injured standing trees during the 1939 spring project. The infestation amounted to an estimated .19

infested trees per acre. However, these injured trees were not severely attacked and apparently produced only a light brood. The present infestation is to be found largely in the vicinity of former control work but has decreased nearly 50 percent from that of last year.

Washington Creek Unit Acres -- 2,560

Infested trees per acre	.21
Percent of stand killed	.4
Infested trees on unit	538

South of Washington Creek and east of the forest boundary is an area of about four sections of heavily stocked young pine. The age averages from 100 to 120 years, although there are occasionally small areas of very old timber. The infestation of .2 infested trees per acre in this young stand is not serious. The infested trees occur in the more heavily stocked areas where the stand occasionally contains 100 or more trees per acre and is considered as more of a thinning process than as an epidemic. Although this area is shown as National Forest, at least one section is privately owned.

Orogrande Unit Acres -- 22,400

Infested trees per acre	.07
Percent of stand killed	.1
Infested trees on unit	1,568

Throughout the Orogrande drainage there is a relatively young stand of white pine, 100 to 120 years in age. The stand is very heavily stocked with almost pure white pine. There has been, until comparatively recent years, a mixture of lodgepole pine. Within the past 15 years the lodgepole has been killed out by mountain pine beetle attacks. The epidemic that destroyed the lodgepole pine seems to have left the

white pine intact. The present stand is composed of very thrifty, limby trees.

While at present there is no serious infestation, the area is so heavily stocked that natural thinning which is sure to occur before long may create conditions ideal for insect development by providing weakened material that is highly susceptible to insect attack.

Musselshell Unit	Acres -- 32,000
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Infested trees per acre	.06
Percent of stand killed	.5
Infested trees on unit	1,920

The timber stands of the Musselshell unit are mixed mature white pine, cedar, and fir. The white pine is not evenly stocked and does not constitute a very large portion of the stand.

No serious mountain pine beetle infestation was recorded on the investigation plots examined in the area and none was seen during a rather extensive examination.

Several areas of infested Douglas fir were seen in the unit, the largest of which was south and west of the Mud Creek lookout. In the latter area groups of from 10 to 30 infested trees were found.

CONCLUSIONS

Of the six areas surveyed, there is but one on the National Forest that must be considered as potentially serious. This area is the Sheep Mountain drainage of the Sheep Mountain unit, where 1,600 acres are infested to the extent of .36 infested trees per acre. It is thought that a further increase in this infestation is likely if some action is not taken to check it. In all probability, such a loss

will be in the nature of a gradual annual increase which in time will materially value the stand.

The enclosed map will show the location of the areas surveyed.

Respectfully submitted,

TOM T. TERRELL
Senior Scientific Aide

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Comments and Recommendations
by
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Senior Entomologist

With one exception Mr. Terrell's report depicts a satisfactory condition of the mountain pine beetle infestation within the white pine stands of the Clearwater National Forest. This exception is that part of the Sheep Mountain unit known as the Sheep Mountain Creek drainage. In this subunit there is a potentially dangerous infestation of the mountain pine beetle which is expected to increase in severity during the coming season. The existing infestation will average .36 of an infested tree per acre, and occurs in small groups. Mr. Terrell's report shows that there are some 1,600 acres in this subunit, with an estimated infestation of 600 trees.

It will be recalled that this area was covered by control in the spring of 1939, at which time an infestation of 1.026 trees per acre was distributed throughout the entire Sheep Mountain unit. As a result of this operation the subsequent infestation of this insect (1939 attack) was reduced to .29 of an infested tree per acre. Mr. Terrell's data for the 1940 season show that there has been a still further reduction in the severity of the infestation, which is recorded as .23 of an infested tree per acre for the entire unit. However, this loss figure should be divided into two infestations of .15 and .36 of an infested tree for the two areas of the total unit.

Severe losses from attacks of the mountain pine beetle during the past 10 years (estimated at 25 percent), and the fact that the infestation is apparently rebuilding to an epidemic status, indicate that this timber stand in this subunit can be regarded as susceptible to attacks of the mountain pine beetle. This condition, with the fact that the status of the overwintering broods indicate a marked increase in the infestation during the 1941 season, points to rather serious losses to come within the next year or two. As a result of this condition and the desire to keep the infestation within the Clearwater National Forest and adjacent units to a minimum, it is recommended that the infestation within the Sheep Mountain Creek drainage be treated in the spring of 1941. The sum of \$3,600 will be required for the execution of this project.

